Cognizant

22nd National Award for Excellence in Energy Management 2021

Techno Campus Office (TCO) - Chennai

August 2021

Agenda

1. Company Profile
2. ENCON Projects - with and without investment
3. ENCON efforts for the past 3 years
4. Total Employee Involvement Programs
5. Monitoring, Reporting and Implementation Methodologies
6. Way Forward and Summary

Cognizant Overview

Cognizant is a multinational corporation that provides IT services, including digital, technology, consulting, and operations services. It is headquartered in Teaneck, New Jersey, United States.

#185

On 2021 **Fortune 500**

Fortune

#533

On **Forbes Global 2000** for 2020

Forbes

#483

On **Forbes The Best Employers for Diversity** 2019

Forbes

12 Years

One of **Fortune's Most Admired Companies**

Fortune

#63

On Forbes Top 100 Digital Companies for 2019

Forbes

#19

On **Forbes America's Best Employers** 2020

Forbes

Cognizant is included in the NASDAQ-100 and the S&P 500 indices. Cognizant had a period of fast growth during the 2000s

159+ delivery and operations centers globally and spread across 39 countries

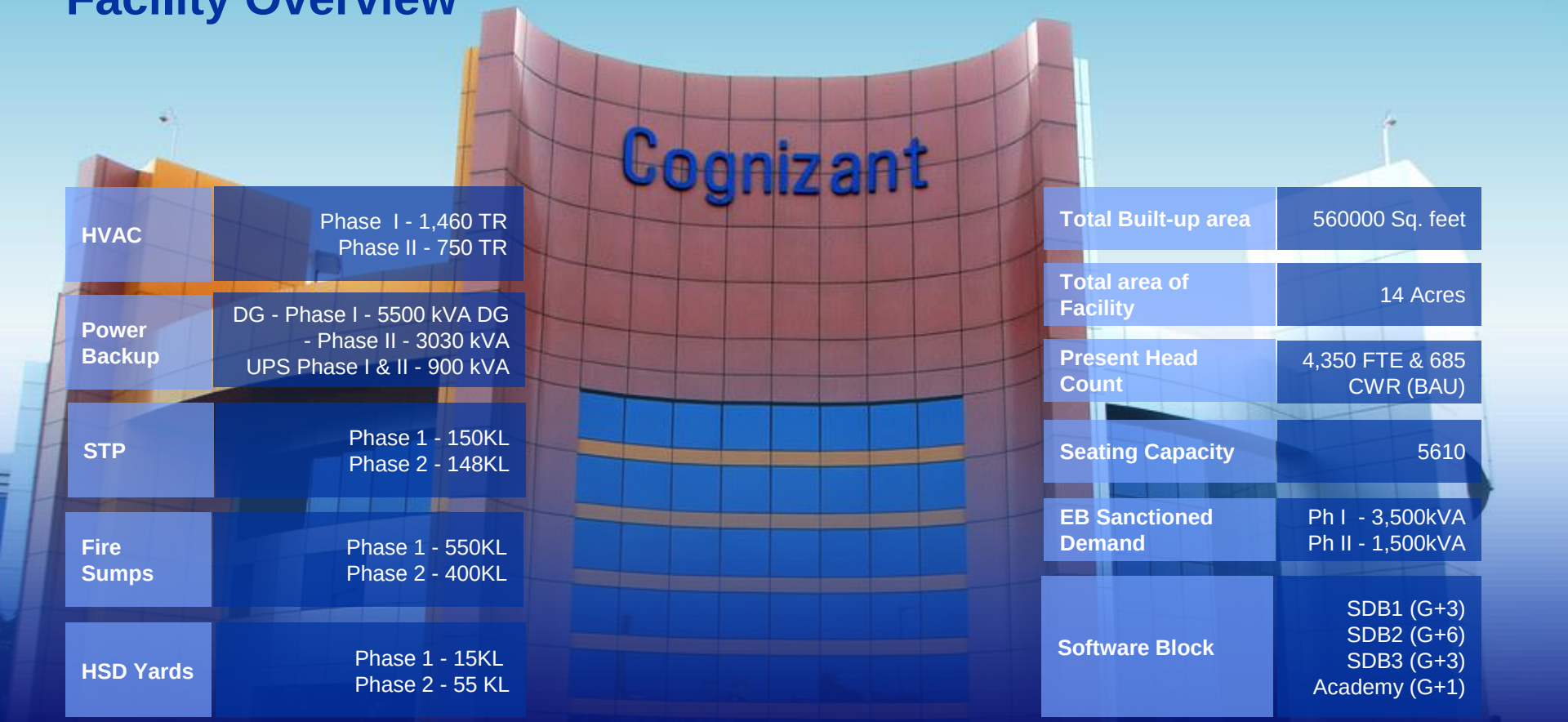
The company has more than 291,700 employees globally, of which, 100,000 are women employees.

Total global footprint of 24 million+ built up area, in which 13.6 million SFT is of own Facility

Majority of these operations are in hot and humid climate and operates on 24X7 basis

More than 80% of the space is air-conditioned

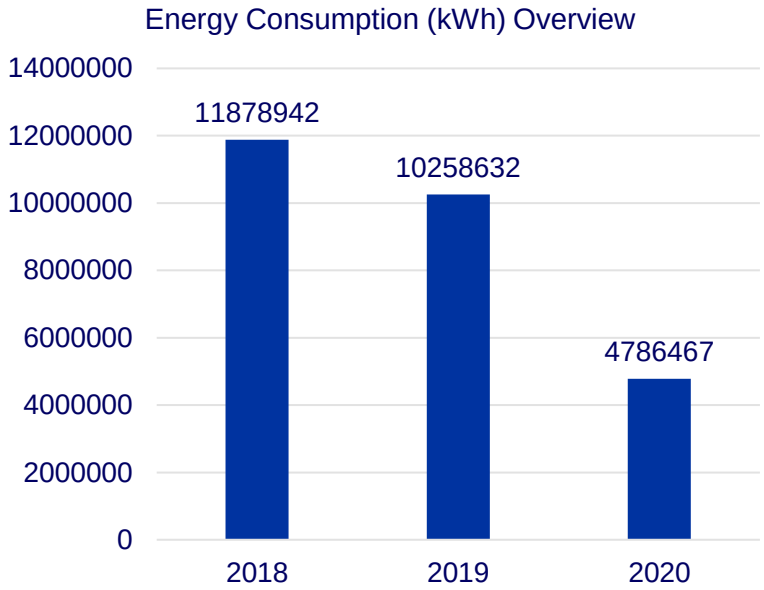
Facility Overview

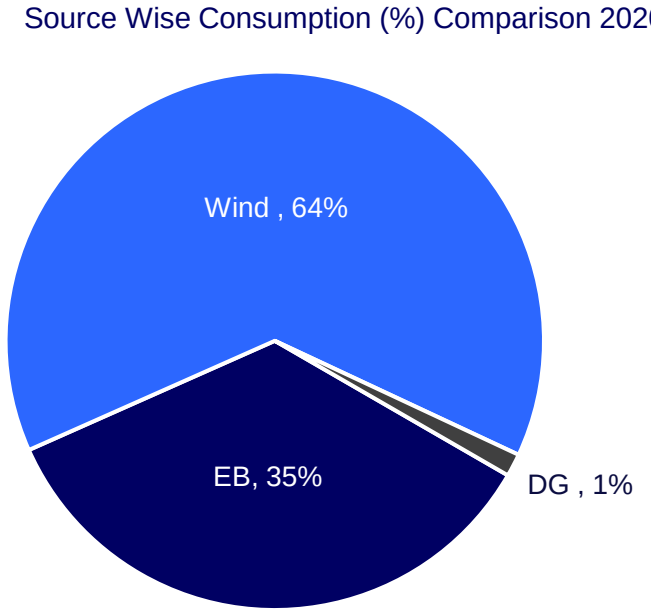


HVAC	Phase I - 1,460 TR Phase II - 750 TR
Power Backup	DG - Phase I - 5500 kVA DG - Phase II - 3030 kVA UPS Phase I & II - 900 kVA
STP	Phase 1 - 150KL Phase 2 - 148KL
Fire Sumps	Phase 1 - 550KL Phase 2 - 400KL
HSD Yards	Phase 1 - 15KL Phase 2 - 55 KL

Total Built-up area	560000 Sq. feet
Total area of Facility	14 Acres
Present Head Count	4,350 FTE & 685 CWR (BAU)
Seating Capacity	5610
EB Sanctioned Demand	Ph I - 3,500kVA Ph II - 1,500kVA
Software Block	SDB1 (G+3) SDB2 (G+6) SDB3 (G+3) Academy (G+1)

Energy Consumption Overview- 2018 to 2020





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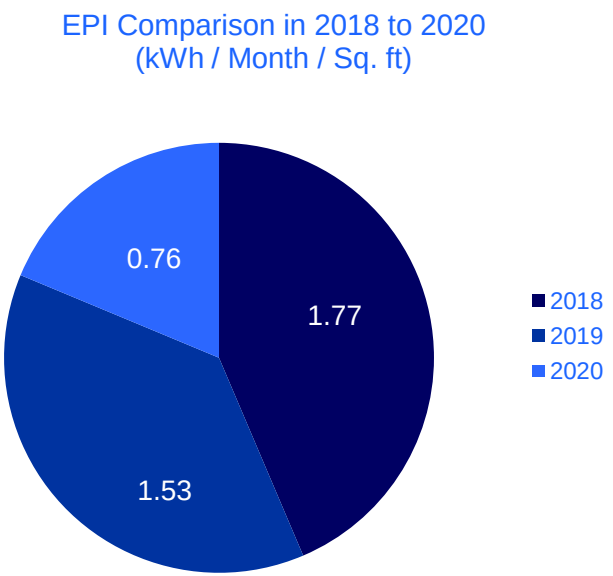
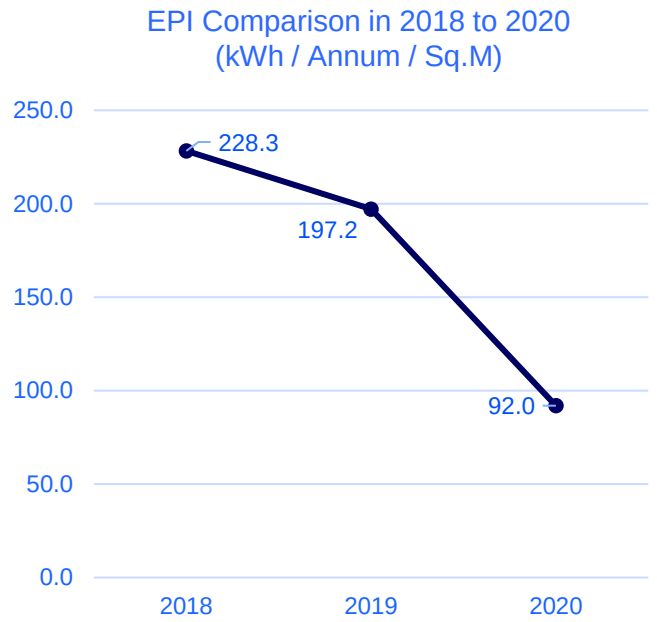
Monthly Energy Performance Index (EPI) - 2018 to 2020





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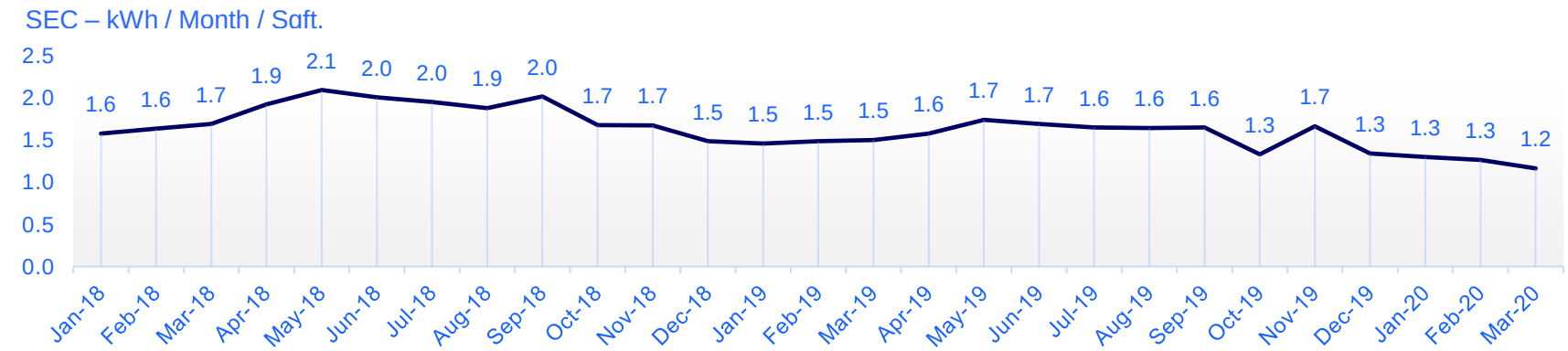
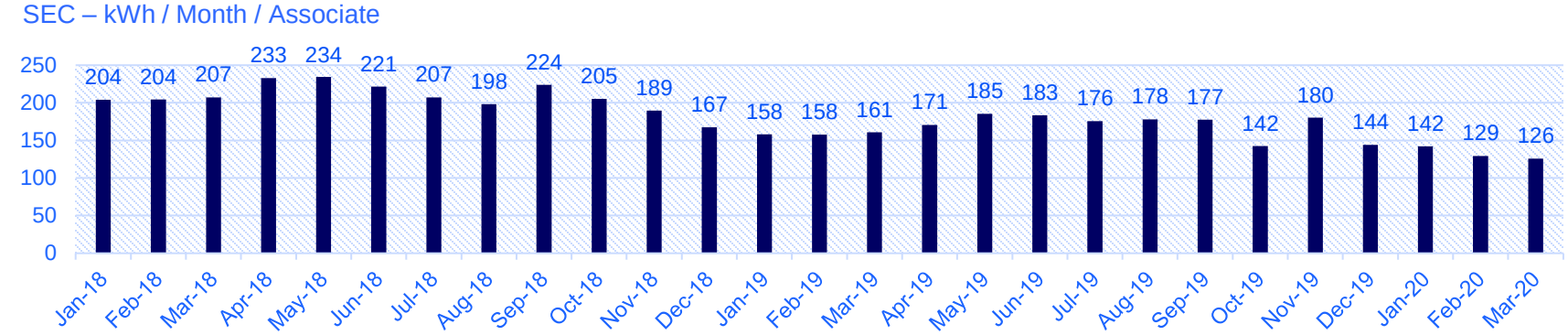
Specific Energy Consumption Overview - 2018 to 2020





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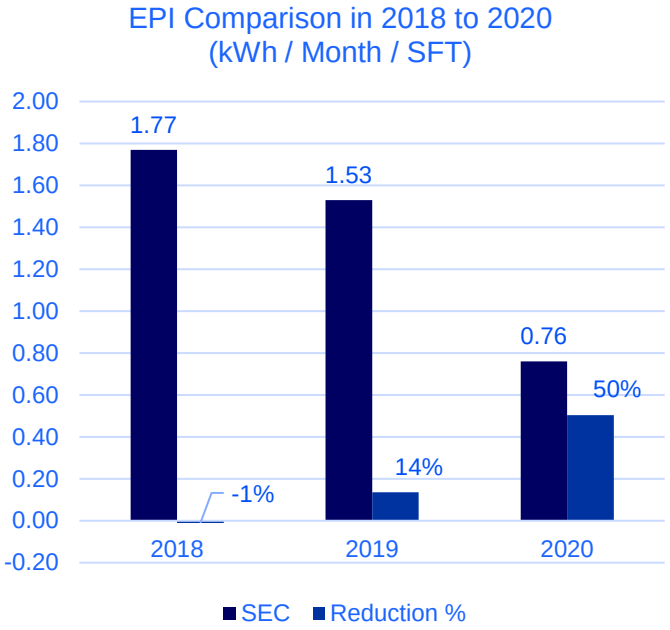
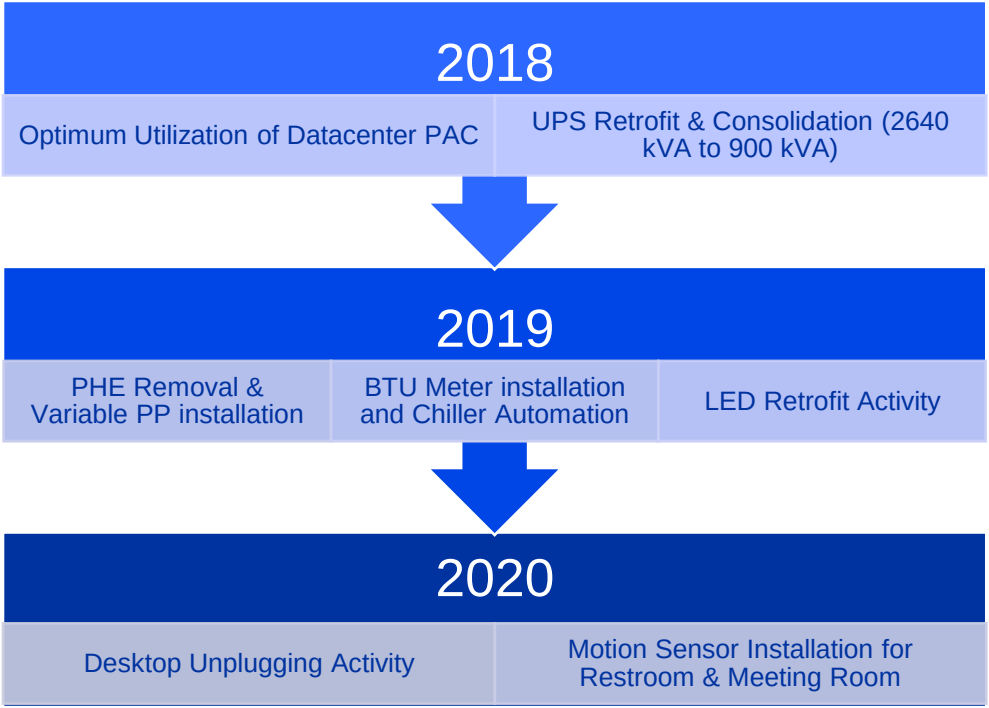
Specific Energy Consumption Trend Analysis - 2018 to 2020





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Comparison of SEC with Internal & National Benchmark

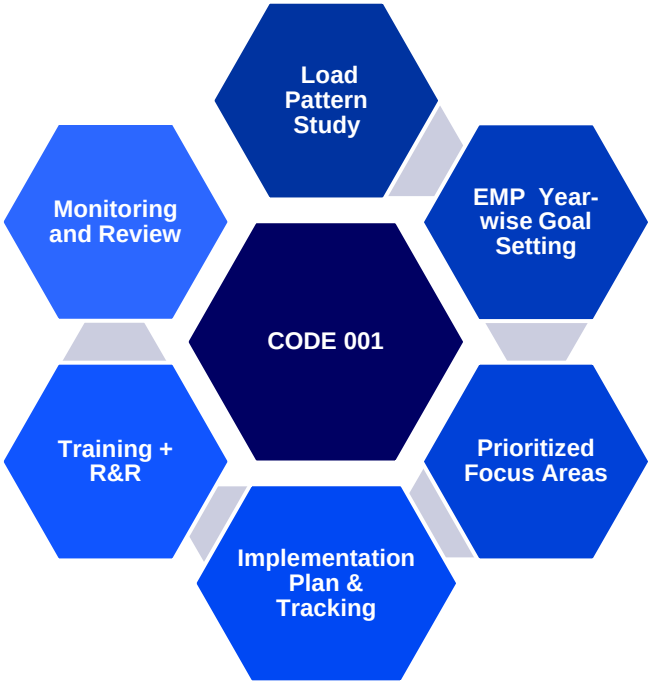
BEE - National Benchmark			
	EPI in kWh/Sq. M. / Year		
Star Rating	Warm and Humid	Composite	Hot and Dry
1 Star	200-175	190-165	180-155
2 Star	175-150	165-140	155-130
3 Star	150-125	140-115	130-105
4 Star	125-100	115-90	105-80
5 Star	**Below 100**	**Below 90**	**Below 80**

Internal Benchmark

Code 001

- **Complaints relating to comfort – Zero**
- **Downtime of equipment – Zero**
- **Efficiency – One unit per square foot per month**

Approach Methodology



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List of Project Planned in 2021

Planned Initiatives	Energy Savings (kWh)	Cost Saving (₹)	Investment (₹)	ROI
 SDB-3 Chiller Retrofit Task	8,27,400	66,19,200	285,00,000	52
SDB-3 AHU EC Fan Replacement (conventional AHU motor- 11 KW, EC fan AHU - 3.3 KW) 	7,76,160	62,09,280	151,50,000	29
 Chiller Header Line Integration between SDB-1 & SDB-2	2,57,184	20,57,472	52,80,000	31
MD Reduction 0f 1000 kVA (3500 KVA to 2500 kVA) planned in Phase-1 	Nil	31,17,267	8,30,565	3
Total	18,60,744	180,03,219	497,60,565	33

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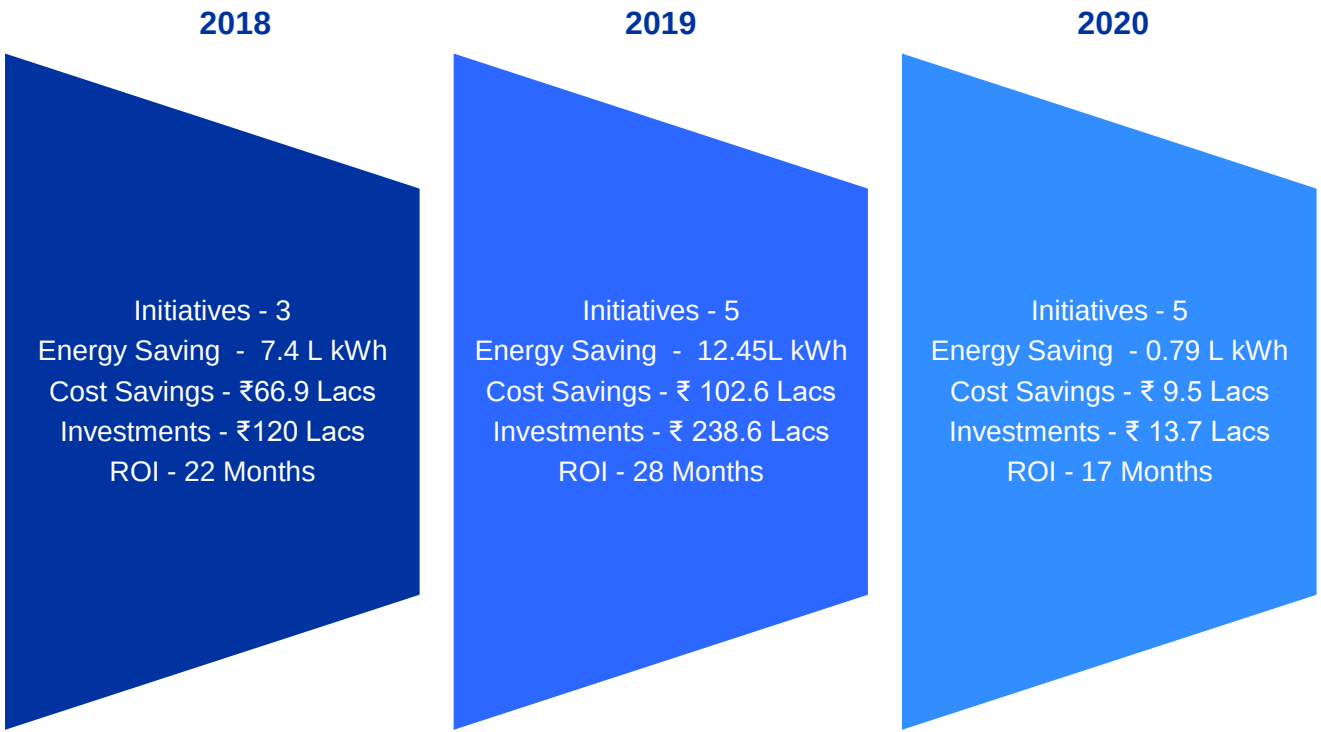
Energy Saving Projects Implemented Summary in 2018 to 2020



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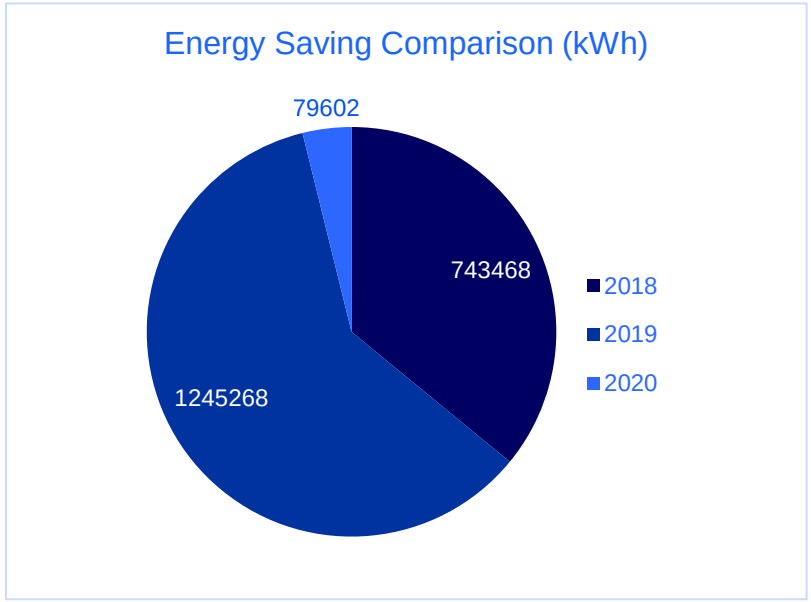
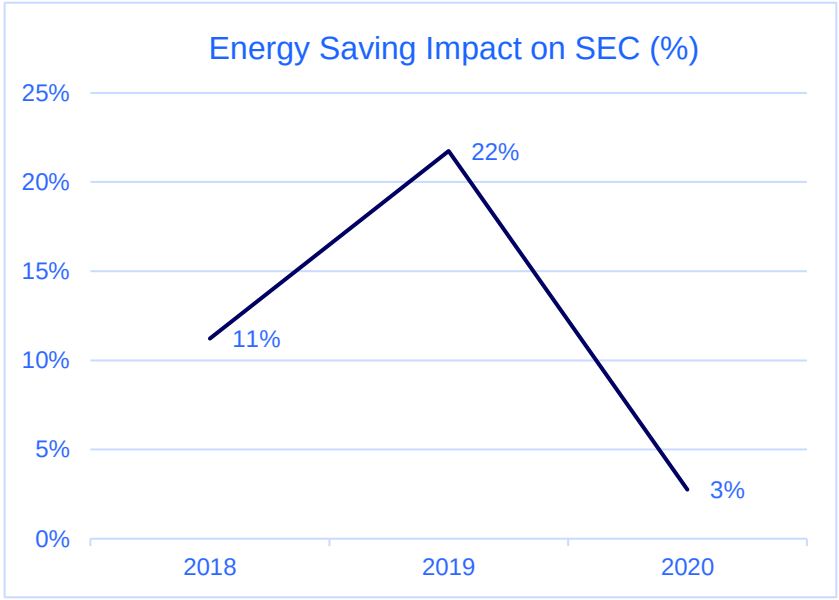
Energy Saving Projects Implemented in 2018 to 2020





Total Energy Savings
20.68 L kWh

Total Cost Savings
INR 179 Lakhs

Overall SEC Reduction
0.55 kWh / Month / Sq.ft.

Overall SEC Reduction 32%

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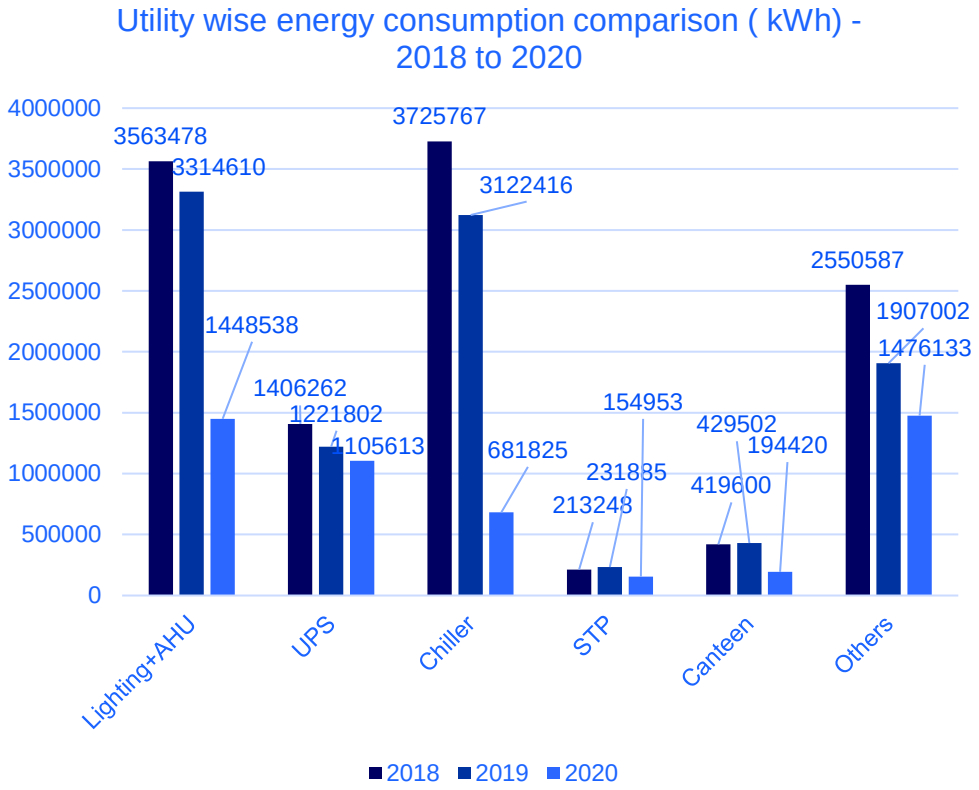
Energy Saving Projects Implemented in 2018 to 2020



Utility wise reduction -2018 to 2019 (BAU)

Lighting + AHU
248868 kWh
7%

UPS
184460 kWh
13%

Chiller
603351
16%

STP
-18637
-9 %

Canteen
-9902
-2%

Others
643585
25%

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Innovative Project - Peripheral Area Light Fixture Pole Height Modification

Problem statement

- The peripheral area light poles is 15 meters, creating difficulty for inhouse team to conduct maintenance activities
- Maintaining the desired Lux level is a challenge
- Since existing fixture is 250W MHL , there is issue of delayed start/pick up of glowing incase of power change over

Implementation

- Height of the pole was reduced to optimum level (12 meters)
- Conventional 250W MHL light fittings are replaced by 100WLED

Benefits

- Improved the lux level as per the standard (from 30 to 60 lux)
- Easy to maintain the pole as the height is reduced

Pole Height is **15 Meters**

Pole Height is **12 Meters**

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Innovative Project - Peripheral Area Light Fixture Pole Height Modification

Execution of Innovation

Before Activity (Lux)

After Activity Lux

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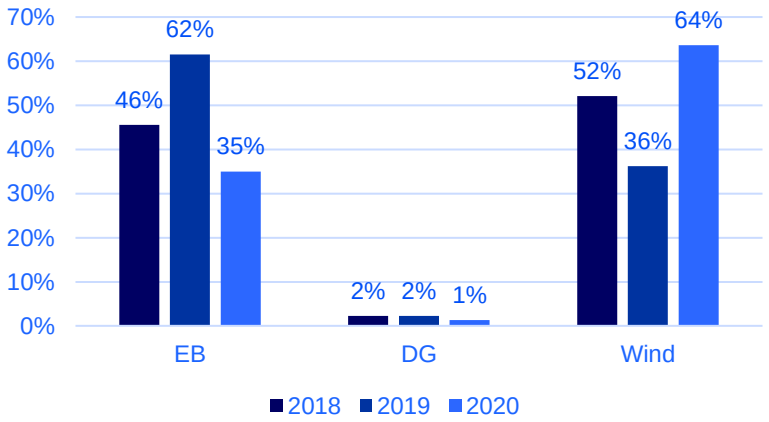
Innovative Project - Peripheral Area Light Fixture Pole Height Modification

Backup Calculation

Existing Fixture Wattage	-	250W MHL
Total Fixture Quantity	-	20 Nos
Total Power Consumption	-	5.5 kW x 12 Hours/Day - 66 kWh/Day
New LED Light fixture wattage	-	100 W
Total Power Consumption	-	2 kW x 12 Hours/Day - 24 kWh/Day
Total Energy Consumption Reduction	-	42 kWh/Day
Annual Energy Savings	-	15330 kWh/annum
Energy Cost	-	₹ 10/kWh
Annual Cost Savings	-	₹ 153300
Investment for LED Fixture Replacement	-	₹ 160000/-
Light Pole Modification Expenditures	-	₹ 173264/-
Total Expenditure	-	₹ 333264/-
Payback Period	-	26 Months

Utilization of Renewable Energy Sources - 2018-2020



Total Direct GHG Emission Reduction

10626 MT of CO_2

Technology (Electrical)	Type of Energy	Onsite/Offsite	Installed Capacity (MW)	Wind Energy consumption (million kWh)	% of Overall Wind Energy
Electrical	Wind	Offsite	256.85	12.95	48%

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Utilization of Renewable Energy Sources – FY 2018-2021

Year	Installed Capacity (MW)	Total Wind Energy Contracted Quantum (Lacs kWh)	Actual Supplied Wind Energy Quantum (Lacs kWh)	TCO Consumption (Lacs kWh)	Allocation contribution (%)
2018-19	256.85	525	511	52.4	3.64%
2019-20	256.85	525	509	29.03	3.15%
2020-21	256.85	525	379	34.81	2.11%

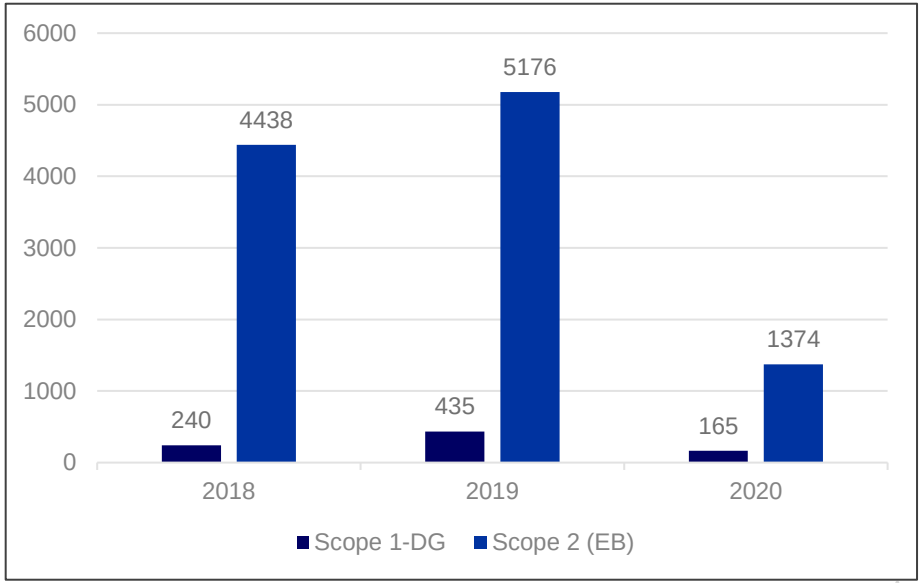
- In FY 2018-19 additional quantum of 200 Lacs kWh purchased with an investment of INR.200 Lacs
- RPO is complied in FY 2017-18 as Solar – 5% and Non-Solar – 9%
  - Solar REC purchased – 356 No's
  - Non-Solar REC purchased – 641 No's
- Allocation contribution reduction for FY 2018-21
  - Tariff – Industrial with Tax (INR.6.35/kWh)
  - Less wind generation during peak seasonal months

Waste Utilization and Management

Cognizant choose to refuse ‘Single-use plastics” irrespective of thickness form July 13, 2018

Sl No	Type of Waste Generated	Disposal Method	Action Taken for Reduction of Waste
1	Hazardous Waste	Used and waste oil disposed to TNPCB authorized recycler	Battery waste – Extension of battery warranty (3 to 3.5 years)
2	Non-Hazardous Waste	Carton & paper waste disposed to authorized recycler Ms.ITC ltd & got 10 reams	Paper waste – 1) Limitation of printer access 2) E-Fit tool implemented and manual Check list optimized 3) Paper cups usages eliminated 100%
3	E Waste	Disposed to TNPCB authorized recycler	E –Waste – CFL to LED (Lifetime enhancement)

GHG Inventorisation - 2018 To 2020



GHG Reduction

GHG Reduction Target & Action Plan

1. RE (Wind) utilization reduced from 52% to 36% in Year 2019
2. Non R2O – Apr'20 to Dec'20 (Minimal occupancy)

1. SBT-24% of reduction of GHG emission in 2024
2. Energy Efficiency project implementation

GHG Target

Indoor Air Quality (BAU)

Test Parameters	Units	Result	Permissible limit	Remarks
Carbon Dioxide (CO2)	Mg/m3	839	1800	1. Testing through NABL Laboratory 2. Frequency of sampling is quarterly once for workstations
Total Fungal Count	Cfu/m3	3	500	
Total Bacterial Count	Cfu/m3	32	500	

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Standardization of Best Practices

Personnel Computer

Sleep mode enabled for all personnel computer

Conventional CPU replacement with compact CPU

Awareness created to Associates to switch off the monitor while leaving the workplace

PC to Laptop
(95% Associates)

Air-Conditioning

Workplace temperature policy standardized
24 ° C to 26 ° C

Maintaining UPS/ Battery room temperature b/n
25 ° C to 26 ° C

Hub room temperature-maintained b/n
24 ° C to 26 ° C

Kitchen / Pantry

Elimination of electrical hot plate

Mandatory use of BEE star rated equipment's

Scheduled operation of ventilation system

Periodical cleaning of heater in bain-marie

Standard operation temperature for all freezer equipment

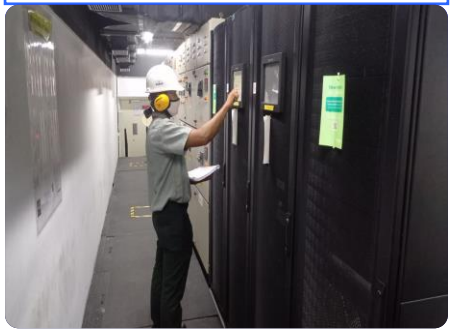
Weekly deep cleaning for all type of freezer

Kaizen by Plant Team

Desktop Unplugging Activity

Light Pole Height Optimization

UPS Modules capacity Optimization



Peripheral light retrofit (250W MHL to 100W LED)

Motion Control Sensor for Wash Room Lighting

Lighting Circuit Modification with Switch Color Code

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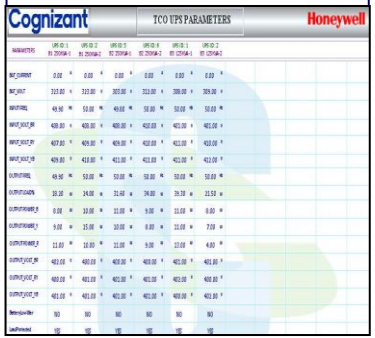
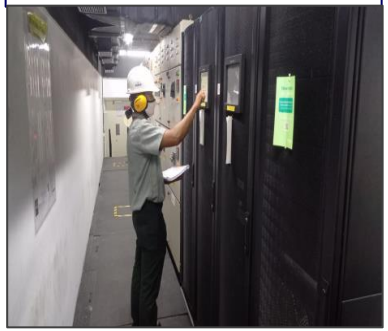
Teamwork, Employee Involvement & Monitoring

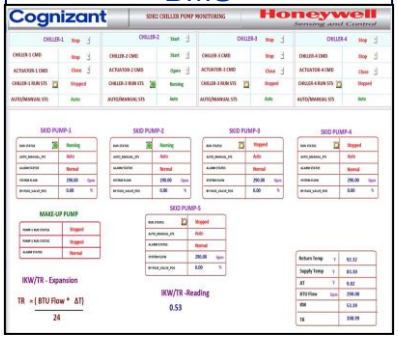
UPS Energy Monitoring via BMS



UPS Parameters Checking

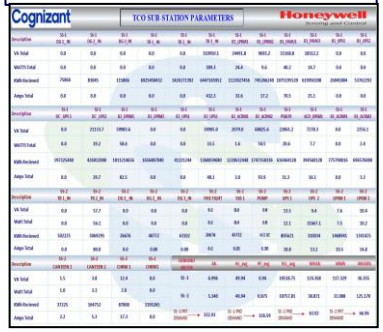


Chiller Monitoring @ BMS



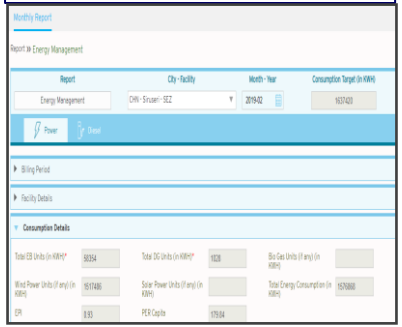
Chiller Parameters checking

Substation feeder load Monitoring via BMS



Substation Parameter Monitoring

FMS Tool Consumption Monitoring



DG Parameters checking

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Energy Awards

Confederation of Indian Industry

18th National Award for
Excellence in Energy Management 2017

This is to certify that

COGNIZANT TECHNOLOGY SOLUTIONS (INDIA) PRIVATE LIMITED,
TECHNO CAMPUS, CHENNAI

is an "Energy Efficient Unit"

This is being given on completion of the National Competition For Excellence in Energy Mnagement held on 30 ,31 August & 1 September 2017.at Hyderabad

S RAGHUPATHY
Deputy Director General
Confederation of Indian Industry

MEHER PUDUMJEE
Chairperson - Energy Efficiency Council
CII – Godrej GBC

L.S.GANAPATI
Chairman
National Award for Excellence in Energy Management 2017

CII Award - Energy Efficient Unit 2017

Confederation of Indian Industry
125 Years - Since 1895

21st National Award for
Excellence in Energy Management 2020

This is to certify that

Cognizant Technology Solution (I) Private Limited,
Thoraipakkam, Chennai

has been recognized as

"Excellent Energy Efficient Unit"

This acknowledgement is based on the evaluation by panel of judges at the "National Award for Excellence in Energy Management" held during 25 - 28 August 2020.

K S Venkatagiri
Executive Director
CII - Godrej GBC

Ravichandran Purushothaman
Chairman, Energy Efficiency Council
CII - Godrej GBC

CII Award - Excellent Energy Efficient Unit

EHS Awards

CII Award - EHS Excellence 2020
5 Star

Sectoral Award - Winners

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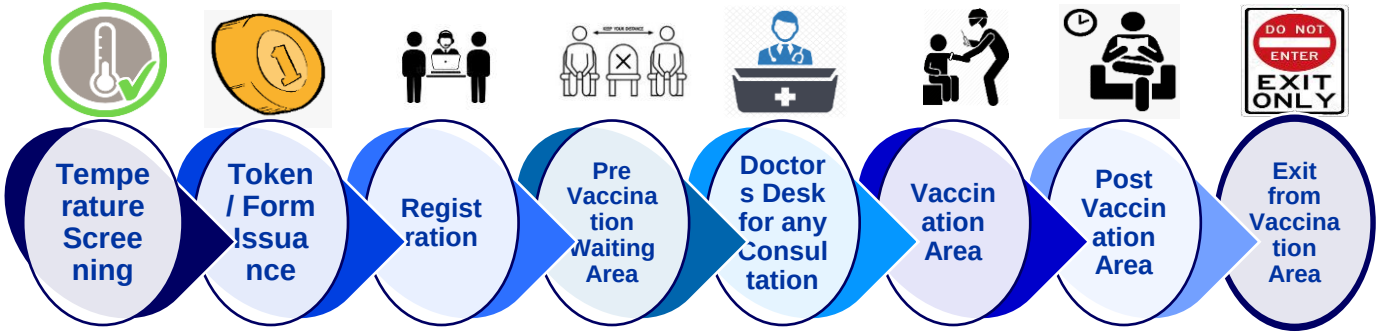
Major Achievement - COVID Vaccination Drive



Temperature Screening → Token / Form Issuance → Registration → Pre Vaccination Waiting Area → Doctors Desk for any Consultation → Vaccination Area → Post Vaccination Area → Exit from Vaccination Area

Totally 31230 Vaccination has been done
(02.06.21 to 19.08.21)

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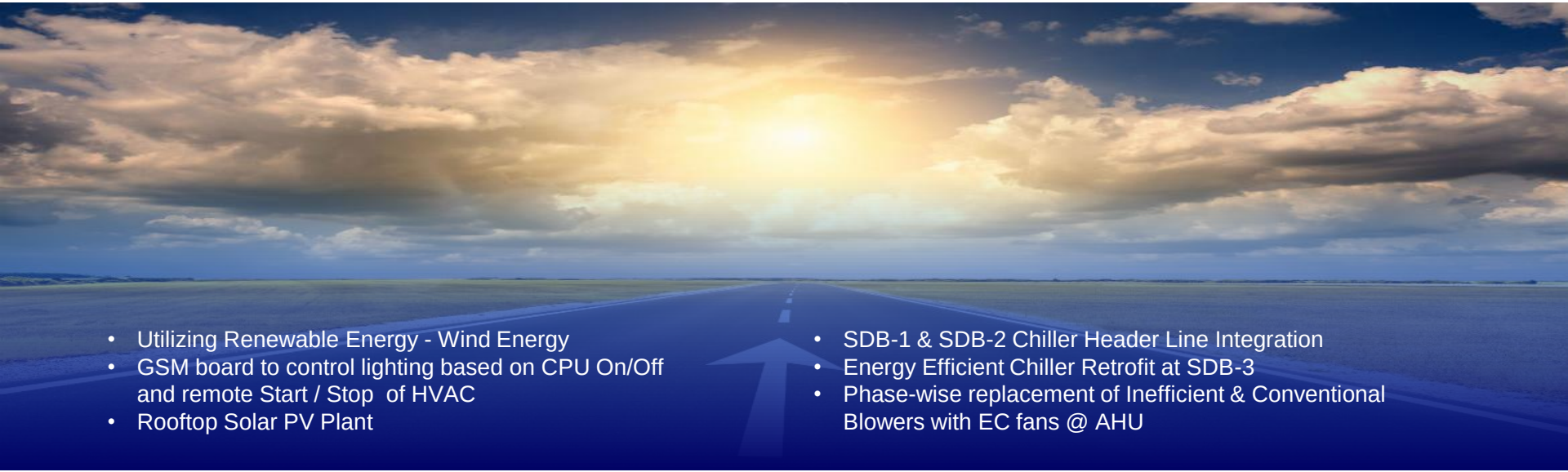
Way forward

3 Way Approach

Energy Efficiency → Green Energy → IOT & Digital



- Utilizing Renewable Energy - Wind Energy
- GSM board to control lighting based on CPU On/Off and remote Start / Stop of HVAC
- Rooftop Solar PV Plant

- SDB-1 & SDB-2 Chiller Header Line Integration
- Energy Efficient Chiller Retrofit at SDB-3
- Phase-wise replacement of Inefficient & Conventional Blowers with EC fans @ AHU

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22nd National Award for Excellence in Energy Management 2021

Techno Campus Office (TCO) - Chennai

August 2021